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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/071,202	05/01/1998	HOI-SING KWOK	007198-334	5254

21839 7590 04/23/2003

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EXAMINER

LESPERANCE, JEAN E

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 04/23/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

09/071,202

Applicant(s)

KWOK ET AL.

Examiner

Jean E Lesperance

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-19 and 21 is/are rejected.
- 7) ☒ Claim(s) 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 1998 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **ETAILED ACTION**

### ***Drawings***

This application, filed under former 37 CFR 1.60, lacks formal drawings. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings. In unusual circumstances, the formal drawings from the abandoned parent application may be transferred by the grant of a petition under 37 CFR 1.182.

Claims 6-21 are presented for examination.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6-19, and 21 are rejected under 35 U.S.C. 102 (b) as being unpatentable over U.S. Patent # 5,274,484 ("Mochizuki et al.").

As for claims 6 and 15, Mochizuki et al. teach the N-C phase transition type liquid display device executes only a bistable drive of H (bright) state and F (dark) state

utilizing hysteresis characteristics (column 3, lines 23-26) corresponding to a bistable cholesteric liquid crystal display; These scanning electrodes and signal electrodes are assembled such that they are orthogonal to each other and picture elements are in a liquid crystal display panel formed in all of the intersections between the above two groups of electrodes (column 6, lines 40-45) corresponding to a plurality of pixels within said display and driving means to apply voltage to each pixel; said first and second electrodes are scanning electrodes that supply said phase transition type liquid crystal display panel with the voltage for initializing all of said picture elements, and wherein at least one of said first and second electrodes are signal electrodes that supply the selected picture elements of said phase transition type liquid crystal panel with the voltage for executing a gradational display (column 16, lines 13-20) corresponding to control means controlling said driving means to supply an initial voltage to said pixels to set all pixels to the p state, subsequently supplying sufficient voltage to selected pixels to switch said pixels to the FC state to provide the desired pattern and maintaining said display for a period of time for viewing of said display.

As for claims 7-9, Mochizuki et al. teach a liquid crystal display device (Fig.11) corresponding to said display includes a matrix of overlapping electrodes with the pixels of the display being defined by overlapping regions of said matrix of electrodes and wherein said matrix of overlapping electrodes comprising a first set of electrodes and a second set of electrodes with the pixels defined by the overlapping regions between said first and second sets of electrodes and wherein the reset voltage from the driving

means is provided to said electrodes to drive all said pixels to P state (reset not shown in the figure).

As for claims 10 and 11, Mochizuki et al. teach the scanning electrodes corresponding to plural lines of the electrodes 11-1 (Fig.11) and the signal electrodes corresponding to plural lines of second electrodes 11-2 (Fig.11) corresponding to the address and data where the pulse voltage applies. Approximately  $24 \pm 3$  and  $6 \pm 2$  voltage is a design choice because it can really be anything depending on the circuit design.

As for claim 12, Mochizuki et al. teach a plural lines of transparent striped electrodes made of transparent conductive films (column 2, lines 42-44) corresponding to said electrodes comprise transparent conductive film.

As for claim 13, Mochizuki et al. teach plural lines of transparent striped electrodes made of transparent conductive films, e.g., indium tin oxide (column 2 lines 44-44) corresponding to transparent conductive film comprises indium tin oxide.

As for claim 14, Mochizuki et al. teach the space between the upper electrodes and the lower electrodes i.e., the thickness of the liquid crystal layer has the same order as the space between adjoining electrodes; i.e., the gap between two electrodes on the same substrates, as already described (column 12, lines 67 and 68 and column 13, lines 1 and 2) corresponding to the liquid crystal cell has a gap but does not say how much is the gap. The amount of gap can depend on the design of the liquid crystal display. It is a design choice.

As for claim 16, Mochizuki et al. teach a liquid crystal display device that has a thin and passive-type construction and is light weight and requires relatively low power consumption. Due to the above advantages, the conditions that are necessary for panel type or portable type display devices (column 1, lines 23-28) corresponding to said display is incorporated in a pager or cellular telephone.

As for claim 17, Mochizuki et al. teach first and second electrodes are scanning electrodes that supply said phase transition type liquid crystal display panel with the voltage for initializing all of said picture elements, and wherein at least one of said first and second electrodes are signal electrodes that supply the selected picture elements of said phase transition type liquid crystal panel with the voltage for executing a gradational display (column 16, lines 13-20) corresponding to providing a reset voltage to set the pixels in the display to the reflective state; plural lines of upper first electrodes 11-1 are preferably used as scanning electrodes that supply the phase transition type liquid crystal display panel with the initializing voltage for changing all of the picture elements of a liquid crystal into initial states, e.g., H (bright) states. On the other hand, plural lines of the lower second electrodes 11-2 are preferably used as signal electrodes that supply the selected picture elements with the voltage for executing a gradational display. The above selectively supplied voltage overlaps with the former initializing voltage and the driving voltage is applied in total between the scanning electrodes and the signal electrodes (column 7, lines 38-50) corresponding to switching selected pixels to provide the desired pattern to the FC state and the liquid crystal medium, having a peak amplitude which is short of the voltage which drives the

liquid crystal medium into the nematic phase, to hold the intermediate state generated by the first alternating voltage (column 18, lines 57-42) corresponding to holding said display for a suitable viewing period.

As for claim 18, Mochizuki et al. teach applying a second alternating voltage to the liquid crystal medium, having a peak amplitude which is short of the voltage which drives the liquid crystal medium into the nematic phase, to hold the intermediate state generated by the first alternating voltage (column 18, lines 52-56) corresponding to providing electrical pulses to column and row electrodes to impart a voltage on the cholesteric liquid crystal material in each pixel to drive the switching between the p state and the FC state.

As for claim 19, Mochizuki et al. teach the initializing voltage in figure 10A which is in the range of +2 to -2. The range of +10 to 40 is a design choice. Not all reset voltages are necessarily in that range.

As for claim 21, Mochizuki et al. teach controlling including the substep of applying a sustaining voltage where said nematic phase is sustained stably to all of the picture elements in said phase transition type liquid crystal display panel, which are formed corresponding to all the intersections between said first and second electrodes, and simultaneously the substep of applying the voltage that is below said sustaining voltage and is short of dominance of said phase transition to the given portions of the selected picture elements so that the gradational display can be executed by altering the average length of said helical pitch in each of said selected picture elements

(column 16, lines 50-63) corresponding to applying insufficient voltages to any pixels to cause a change from P state to the FC state.

***Allowable Subject Matter***

Claim 20 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: "A method of driving bistable liquid crystal display wherein said step of providing electrical pulses to electrode to switch said selected pixels to the FC state to provide said display comprises driving one set of electrode with an address pulse and the remaining set of electrodes with data pulses such that the selected pixels are subjected to a voltage being the sum of the address and data pulses which is greater than the threshold voltage to switch to the FC state and non-selected pixels received a voltage with a data pulse of inverse sign to be a voltage below the threshold for switching to the FC state". The closest art, Mochizuki et al. as disclosed above, either singularly or in combination, fail to teach or render the above underlined limitations obvious.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (703)



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308-6413. The examiner can normally be reached on from Monday to Friday between 8:00AM and 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709 .

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

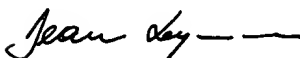
**or faxed to:**

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).


Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance



Date 4-14-2003

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RICHARD HJERPE  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600

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